MANVI GUPTA

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EDUCATION

RWTH Aachen University, Germany	October 2019 - February 2020
RWTH Exchange Worldwide Scholarship Recipient (DAAD)	Overall Grade: 9.25/10

Indian Institute of Technology(IIT) Mandi	August 2017 - July 2021
Bachelor of Technology (B.Tech.)	CGPA: 9.24/10
Computer Science & Engineering	

TECHNICAL STRENGTHS

Computer Languages	C, C++, Python, Java, Scheme(Lisp), Haskell
Web Technologies	HTML, CSS, Flask, PHP
Machine Learning	Keras, Tensorflow, PyTorch, SciKit-Learn, MLflow
Familiar Technologies	MySQL, Hadoop, OpenCV, OpenMP, Git, Redmine

WORK EXPERIENCE

Software Development Engineer - Adobe Systems India   *Jul 2021 - Present*
Cloud Tehcnology Unit (Sensei & Search Team)
Working on rebuilding Adobe's internal Machine Learning platform.

Engineering Manager - Furrble[1]   *Dec 2020*
Managed the technical team to build an Android App for Furrble using Flutter and Go.

Product Intern - Adobe Systems India   *May 2020 - July 2020*
Built a Machine Learning pipeline on a distributed Kubernetes Platform & developed a POC for MLflow & Kubeflow capabilities.

Received *Pre-Placement Offer* for full time role as Member of Technical Staff based on excellent performance during the internship.

Software Administrator - Book Nook IIT Mandi   *Aug 2018 - Sept 2019*
Refactored & added new features to the Book Renting Software of Recreational Library at IIT Mandi.

PROJECTS

MUTUAL INFORMATION ESTIMATION IN DNNs	September 2020 - Present
Major Technical Project	*Dr. Samar Agnihotri (IIT Mandi)*

- Implemented the Ensemble Dependency Graph Estimator (EDGE) for Scalable Mutual Information Estimation and its variation. Compared the results with that obtained from the HSIC criterion.
- Long term goal is to compare different algorithms for the closest estimate of mutual information across hidden layers in a Deep Neural Network and prove/disprove the **Information Bottleneck Principle**.

OPTIMIZING FUNCTIONAL LANGUAGE COMPILERS	May 2021 - June 2021
Program Analysis	*Dr. Manas Thakur (IIT Mandi)*

- Performed a detailed survey on the optimization techniques used by functional language compilers.
- Compared and analysed them for their extent of optimization and the associated overheads.
- Suggested potential improvements in the existing methods, & ways to come up with new optimizations.

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[1]A Bangalore based start-up

CALL TREE REVERSAL October 2019 - February 2020
Using Mixed Integer Programming *Prof. Dr. Uwe Naumann (RWTH Aachen)*

· Learnt about checkpointing Function Call Trees using Algorithmic Differentiation that could help to increase program efficiency.
· Technologies Used: GUROBI (CMPL)

CIF VALIDATOR WITH REST API April 2019 - June 2019
A real world tool to validate Crystallographic Information Files *Dr. Arti Kashyap (IIT Mandi)*

· As a team, created a functional RESTful API for validating Crystallographic Information Files (CIF).
· CIF File is parsed using PyCODCIF and the frontend is built on Barebone framework.
· In collaboration with the Material Science group at EPFL Switzerland. The tool is to be integrated on materialscloud.org.

RELEVANT COURSEWORK

Mathematical Foundation of Computer Science   Machine Learning
Information and Database Systems   Paradigms of Programming
Data Structures and Algorithms   Satisfiability Checking
Computer Organization   High Performance Computing
Operating Systems & Computer Networks   Compiler Design & Program Analysis

POSITION OF RESPONSIBILITY

Founder Coordinator, ACM-W Chapter IIT Mandi
Chairperson, August 2019 - August 2020

· Officially set up the new community. Guided girl students about opportunities in the field of computing and connect the students to women leaders of the world.

Undergraduate Teaching Assistant

· *Paradigms of Programming (Feb. 2021 - June 2021)*
· *Data Science III (Sep. 2020 - Dec. 2020)*
· *Information & Database Systems (Feb. 2020 - Sep. 2020)*

SEMINARS & WORKSHOPS ATTENDED

ACM India Summer School IIIT Delhi
Cyber Security and Data Analytics *July 2019*

· Learnt about security concerns on Social Media, and Cryptographic techniques used in SSL.
· Also got introduced to Natural Language Processing, as a method of encryption-decryption.

ACADEMIC & EXTRA-CURRICULAR ACHIEVEMENTS

- Overall rank 3 in B.Tech class of 2017-2021, among all the departments.
- Winner of *Hacking the Google Maps*, online competition by Heuristics IIT Mandi, in May 2020.
- Runner up in Astronomy Club Hackweek-2018 held at IIT Mandi.
- Winner of Intra College Diwali Photography Competition 2017.
- First, among the 7 teams from the college in Flipkart GRiD Machine Learning challenge.
- Ranked in All-India Top 1% (amongst 11,86,000 candidates) in JEE Mains 2017 and Top 2.8% (amongst 1,59,540 candidates) in IIT-JEE Advanced 2017